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Notice of Allowability

Application No.

10/550,654

Examiner

Gary L. Laxton

Applicant(s)

TSURUYA, MAMORU

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application filed 9/27/2005.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 9/27/2005
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other approved drawing changes.

Gary L. Laxton
Primary Examiner
Art Unit: 2838

June 12, 2006

DETAILED ACTION

EXAMINER'S AMENDMENT

1. The following changes to the drawings have been approved by the examiner: figures 1-4 have been labeled --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Allowable Subject Matter

2. Claims 1-11 are allowed.

3. The following is an examiner's statement of reasons for allowance:

Claims 1-5 and 9-11; prior art fails to disclose or suggest, inter alia, a switching power source apparatus having a first series circuit including a primary winding and a main switch connected in series; a second series circuit connected to each end of the main switch or to each end of the primary winding and including an auxiliary switch and a clamp capacitor connected in series; a third series circuit being connected to each end of the main switch and including a first diode and a snubber capacitor connected in series; a fourth series circuit being connected to a node between the first diode and the snubber capacitor and a node between the auxiliary switch and the clamp capacitor and including an auxiliary winding of the transformer and a second diode those connected in series; wherein the snubber capacitor is discharged through the auxiliary winding to the clamp capacitor when the main switch is turned on; and the snubber capacitor is charged when the main switch is turned off.

Claims 6-8; prior art fails to disclose or suggest, inter alia, a switching power source apparatus having a first series circuit being including a primary winding and a main switch connected in series; a second series circuit being connected to each end of the main switch or to each end of the primary winding and including an auxiliary switch and a clamp capacitor connected in series; a third series circuit being connected to each end of the main switch and including a first diode and a snubber capacitor connected in series; a fourth series circuit being connected to a node between the first diode and the snubber capacitor and a node between the auxiliary switch and the clamp capacitor and including an auxiliary winding and a second diode connected in series; and wherein the snubber capacitor is discharged through the auxiliary winding to the clamp capacitor when the main switch is turned on; the clamp capacitor is discharged through the secondary winding when the auxiliary switch is turned on; and the snubber capacitor is charged when the main switch is turned off.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,947,297 Ke et al disclose an active snubber for a dc converter; US 6,930,896 Mizokami et al disclose a power conversion system; US

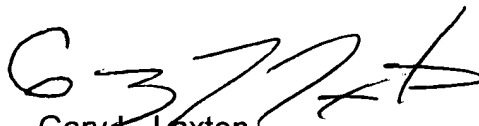
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6,717,827 Ota discloses a switching power supply; US 6,396,719 Morita et al disclose a dc to dc converter.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on (571) 272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

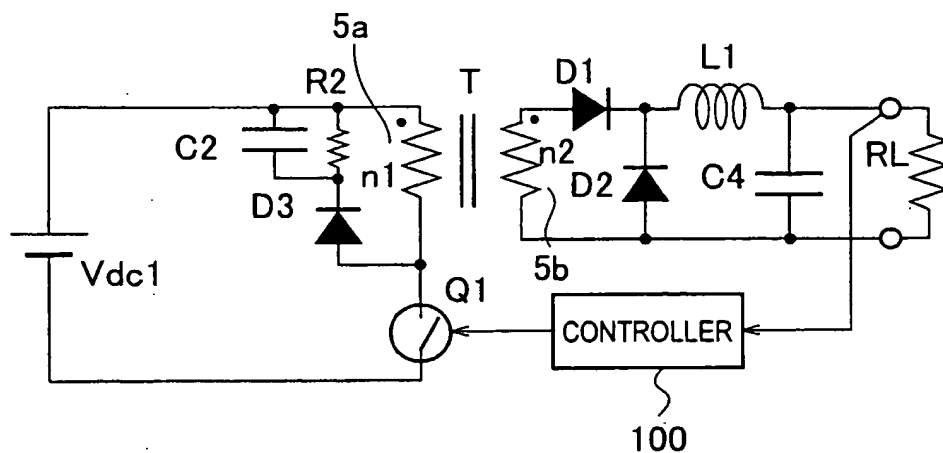

Gary L. Laxton
Primary Examiner
Art Unit 2838

6/12/2006

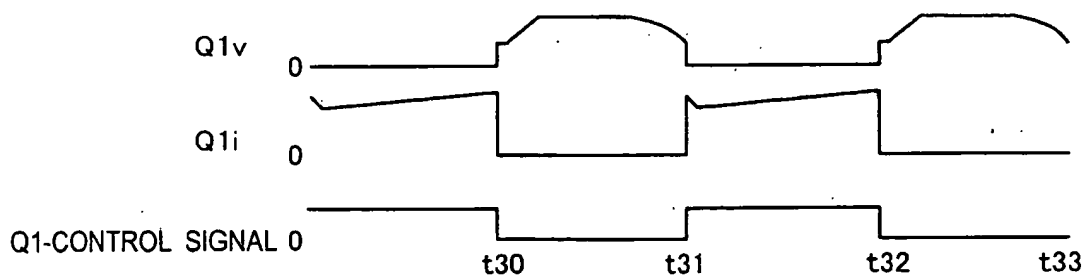
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Prior Art
FIG. 1

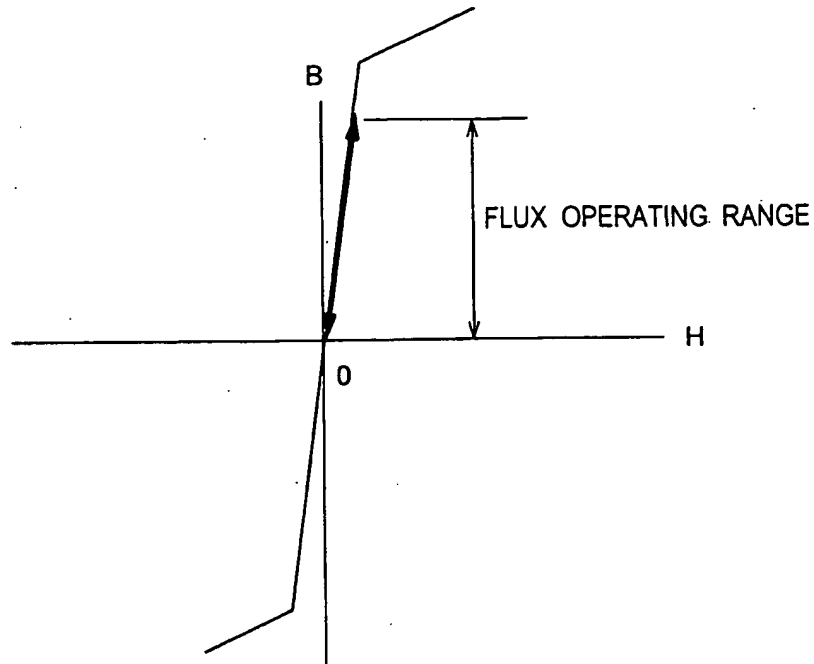


Prior Art
FIG. 2



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Prior Art
FIG. 3



Prior Art
FIG. 4

